Removing or Filling Existing Culverts

Design Manual
Chapter 4
Drainage

Originally Issued: 09-22-00
Revised: 06-18-04

This section presents information related to the removal or filling of existing culverts. When an existing culvert no longer serves its purpose it may be removed from its location, or it may be left in place (abandoned) and filled with flowable mortar. Every job is different so each case needs to be reviewed individually to determine the best course of action.

Removing a Culvert

Usually existing culverts will be removed. If there is a conflict with the existing culvert being in the way of new construction, then the existing culvert must be removed. The most common example would be an old culvert that is to be replaced with a new one in the same location.

Pipe Culverts

Pipe culverts to be removed on grading projects should be noted as such on the plan and profile sheet. Removal is incidental unless the existing pipe culvert has been encased in cast in place concrete (see Section 2102.13 of the Standard Specifications).

R.C.B. Culverts

All R.C.B. culverts not used for future drainage should be removed. R.C.B. culverts to be removed should be included in the tabulation for the removal of structures and paid for by lump sum with size of existing R.C.B. noted. The option of filling the structure with flowable mortar in lieu of removing the structure shall be determined by consultation with the Soils Section and the Office of Bridges and Structures.

Livestock Passes

For the removal of a livestock, the designer should refer to Policy No. 610.06 of the Policy and Procedures Manual. If a livestock pass has water flowing through it, a smaller pipe may be inserted into the livestock pass to maintain the flow. Contact the Preliminary Bridge Section to determine the proper pipe size.

Filling and Abandoning a Culvert

Any culvert that is filled and abandoned must be shown and referenced on road plans to avoid future problems. Very long or tall culverts may require drilling holes in the pavement or shoulder to introduce flowable mortar. This will reduce the risk of voids in the middle of the structure.

When the culvert is to be filled and abandoned the headwalls of the culvert may need to be removed, depending on the situation. On a smaller construction job, such as resurfacing where there is no significant earthwork being done, the headwalls need to be removed because the remaining exposed section is a hazard. On major construction projects where the headwalls will be covered with fill during the grading process, the headwalls can remain in place because they will no longer be a hazard.

Documentation

Road Design Details 4315 and 4316 should be used in the plans for filling and abandoning a culvert. Tabulation 110-9, Tabulation of Culvert Abandonment, should be used for tabulating the quantities that are needed to fill and abandon a culvert.

R.C.B. culverts designated by the Preliminary Bridge Section, Soils Section, or others to be filled with flowable mortar shall be tabulated (Tabulation 110-9) and paid for as part of the flowable mortar bid item. Flowable mortar is considered incidental when the contractor elects to fill a R.C.B. rather than remove. Holes that are drilled for the placement of flowable mortar in long or tall culverts will be incidental to the flowable mortar bid item. The following notes should be included on the plans, depending on the amount of silt inside the culvert:

- "Silt inside the existing culverts need not be removed prior to placing flowable mortar."
- "Article 1109.03 shall not apply to this item." This note is to be used only when the amount of silt inside the culvert is not known.

If either the headwalls, or all or part of an existing culvert, are removed Tabulation 110-2, Removal of Existing Structures, needs to be included in the plans to denote this.